DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Larry J. Guffey on July 29, 2008.

Claims 21-40 canceled.

Abstract (amended) A device for measuring the three-dimensional movements of an eye includes: (a) a mark array that identifies prescribed positions on the eye whose movements are to be measured, (b) a digital camera for capturing the two-dimensional images of this marker array as the eye is moved,(c) a light source that illuminates the marker array with an output that is outside the spectral range of the camera ,(d) light source that are used to align the camera's optical axis with the center of the eye, (e) an algorithm for computing the three-dimensional positions of the marker array from the information contained in the captured digital images , and (f) a base for fixing the position of the camera relative to the position of the eye, wherein the materials of the marker array are chosen so that the array has the ability to, when illuminated as described above, give off energy that is in the spectral range of the device's camera .

Claims 1-20 amended.

1. (Currently Amended) A device ~~(1)~~ for measuring the three-dimensional, rotational movements of an eye, said device comprising: a means for marking an array of positions on said eye whose rotational movements are to be measured, a means for capturing the two-dimensional, digital images of said array of eye-marked positions as said eye is moved, said image capturing means having an optical axis and a prescribed spectral range, a means for illuminating said marker array with a light source whose output is in a spectral range that is chosen from the group consisting of those that are either within or outside of said spectral range of said image capturing means,

a means for aligning said optical axis of said image capturing means with the center of said eye, and a means for computing the three-dimensional rotational movements of said array of eye-marked positions from the information contained in said captured digital images.

2. (Currently Amended) The device ~~(1)~~ as recited in Claim 1, further comprising a means for fixing the position of said image capturing means relative to the position of said eye whose movements are to be measured.

3. (Currently Amended) The device ~~(1)~~ as recited in Claim 1, wherein said alignment means including an alignment light source ~~(20)~~.

4. (Currently Amended) The device ~~(1)~~ as recited in Claim 2, wherein said alignment means including an alignment light source ~~(20)~~.

5. (Currently Amended) The device ~~(1)~~ as recited in Claim 1, wherein said array marking means including a fluorescent pigment.

6. (Currently Amended) The device ~~(1)~~ as recited in Claim 5, wherein said array illuminating means including an ultra-violet light source.

7. (Currently Amended) The device ~~(1)~~ as recited in Claim 2, wherein said array marking means including a fluorescent pigment.

8. (Currently Amended) The device ~~(1)~~ as recited in Claim 7, wherein said array illuminating means including an ultra-violet light source.

9. (Currently Amended) The device ~~(1)~~ as recited in Claim 3, wherein said array marking means including a fluorescent pigment.

10. (Currently Amended) The device ~~(1)~~ as recited in Claim 9, wherein said array illuminating means including an ultra-violet light source.

11. (Currently Amended) The device ~~(1)~~ as recited in Claim 1, wherein said array marking means including an anti-Stokes fluorescent pigment.

12. (Currently Amended) The device ~~(1)~~ as recited in Claim 11, wherein said array illuminating means including an infrared light source.

13. (Currently Amended) The device ~~(1)~~ as recited in Claim 2, wherein said array marking means including an anti-Stokes fluorescent pigment.

14. (Currently Amended) The device ~~(1)~~ as recited in Claim 13, wherein said array illuminating means including an infrared light source.

15. (Currently Amended) The device ~~(1)~~ as recited in Claim 3, wherein said array marking means including an anti-Stokes fluorescent pigment.

16. (Currently Amended) The device ~~(1)~~ as recited in Claim 15, wherein said array illuminating means including an infrared light source.

17. (Currently Amended) The device ~~(1)~~ as recited in Claim 1, wherein said means of marking an array of positions on said eye whose movements are to be measured having three markers ~~(6)~~ arranged in a 45 degree right triangle.

18. (Currently Amended) The device as recited in Claim 17, wherein said means of computing the locations of said markers having an algorithm having a rotation matrix that describes the eye rotation required to move said markers ~~(6)~~ from a first position to a second position.

19. (Currently Amended) The device as recited in Claim 1, wherein said image capturing means having a digital camera ~~(2)~~, a computer processor ~~(32)~~ and a high-speed interfacing device that connects said camera ~~(2)~~ and said processor ~~(32)~~.

20. (Currently Amended) The device as recited in Claim 19, wherein said processor ~~(32)~~ being configured to fit within a computer chosen from the group herein described as a desktop, laptop, notebook or sub-miniature notebook.

Allowable Subject Matter

2. Claims 1-20 are allowed.

3. The following is an examiner's statement of reasons for allowance: The prior art taken either singularly or in a combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claim 1, which include, a device for measuring three dimensional rotational movements of an eye having a means for marking an array of positions on eye whose rotational movements are to be measured and means for aligning an optical axis of image capturing means with the center of the eye and a means for computing the three-dimensional rotational movements of array of eye-marked positions from the information contained in captured digital image.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammed Hasan whose telephone number is (571) 272-2331. The examiner can normally be reached on M-TH, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky L Mack can be reached on (571) 272- 2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mohammed Hasan/
Primary Examiner, Art Unit 2873
7/29/2008